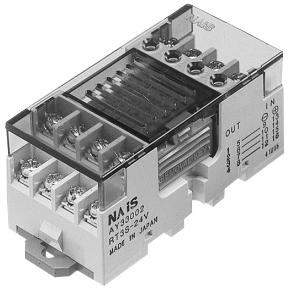
NAiS

SLIM, SPACE-SAVING RELAY TERMINAL FOR 4-POINT OUTPUT

RT-3 UNIT RELAY

(PA Relay type)



FEATURES

- **33 mm 1.299 inchwide space-saving type, with four independent points on a base measuring 33 × 67 mm 1.299×2.638 inch. Contributes to control panel and device downsizing.**
- **Equipped with PA relays with high-sensitivity twin contacts and Au-caldding.**
  Equipped with 5 mm .197 inch wide PA relays. The PA relays feature high sensitivity (12 V type: 120 mW, 24 V type: 180 mW) and twin contacts with Au-cladding, which combine to ensure high reliability even with minute loads.
- **Can be used mounted on a DIN rail or mounted directly (by screw).**
- **Equipped with an LED display to allow easy confirmation of operation.**
- **Incorporates a surge absorber.**
  Incorporates an absorber circuit for coil surges. This protects the circuitry of the controller and prevents operation errors.
- **Relay installation and removal can be easily accomplished with the removal key accessory.**
- **Includes a cover as standard equipment for increased safety.**

TYPES

Type	Rated input voltage	Part No.	Packing quantity	
			Inner carton	Outer carton
PA relay	12 V DC	RT3S-12V	10 pcs.	100 pcs.
	24 V DC	RT3S-24V		

Notes: 1. Cannot be equipped with Power PhotoMOS standard type relays. However, equipping with voltage sensitive type of Power PhotoMOS relays (AQZ❍❍❍D) is possible.
2. 5 V DC units are also available. Please consult us.

RATINGS

1. Input ratings (per PA relay)

Part No.	Rated input voltage	Input current (at rated input voltage, 20°C 68°F) (approx.)	Allowable variation of rated input voltage (–20 to +55°C –4 to +131°F)
RT3S-12V	12 V DC	11.5 mA (Relay 10 mA + LED 1.5 mA)	12 V DC ± 10%
RT3S-24V	24 V DC	10.5 mA (Relay 7.5 mA + LED 3 mA)	24 V DC ± 10%

2. Relay coil specifications (per PA relay) (ref. value)

Relay part No.	Rated coil voltage	Pick-up voltage (at 20°C 68°F) (Initial)	Drop-out voltage (at 20°C 68°F) (Initial)	10% Coil resistance (±10%) (at 20°C 68°F)	Rated comsumption power
PA1a-12V	12 V DC	less than 70% of nominal voltage	more than 5% of nominal voltage	1,200 Ω ±10%	120 mW
PA1a-24V	24 V DC			3,200 Ω ±10%	180 mA

3. Output ratings (per PA relay)

Specification	Item	Performance
Contact rating	Rated control capacity (resistive load)	2 A 250 V AC, 2 A 30 V DC
	Maximum allowable contact power (resistive load)	500 VA (AC), 60 W (DC)
	Maximum allowable contact voltage	250 V AC, 30 V DC
	Maximum allowable contact current	2 A
	Minimum load (ref. value)	100 mV 100 μA
Expected life (Min. operations)	Electrical (resistive load)	10^5: 2 A 250V AC 10^5: 2 A 30V DC 3×10^5: 1 A 250V AC 3×10^5: 1 A 30V DC
	Mechanical (at 180 cpm)	2×10^7

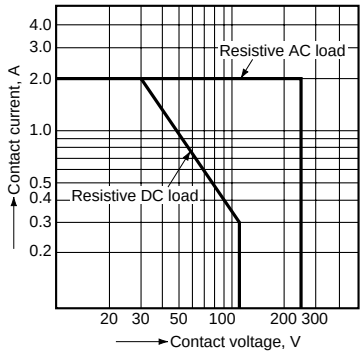
PERFORMANCE

Item		Performance
Breakdown voltage	Between input and output	2,000 Vrms for 1 min.
	Between different terminals (between relays, both ways)	1,500 Vrms for 1 min.
Insulation resistance		Min. 100 MΩ (Using 500 V DC megger)
Vibration resistance	destructive	10 to 55 Hz at double amplitude 1 mm .039 inch
	functional	10 to 55 Hz at double amplitude 1 mm .039 inch
Shock resistance	destructive	Min. 196 m/s² {20G}
	functional	Min. 98 m/s² {10G}
Ambient temperature		–20°C to +55°C –4°F to +131°F
Ambient humidity		35% to 85% R.H. (Not condensing)
Storage temperature		–30°C to +80°C –22°F to +176°F (Not freezing and condensing)
Terminal screw fasten torque		0.3 to 0.5 Nm {3 to 5 kgf·cm}
Coil surge absorber		Diode (1 A, 400 V)
Cross connection protecting diode		1.5 A, inverse voltage 40 V
Weight		Approx. 100 g 3.53 oz

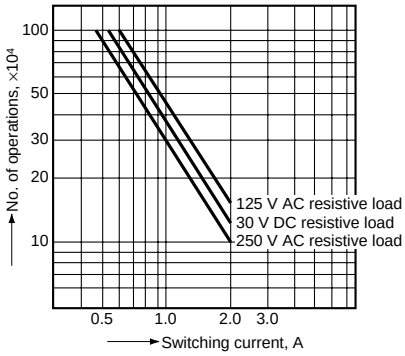
Notes: 1. The value of breakdown voltage and insulation resistance is the initial one.
2. Condensing occurs when the unit relay is exposed to sudden temperature change in a high temperature and high humidity atmosphere. This may cause some troubles like insulation failure of the socket or the print circuit board. Take care under this condition
3. Below 0°C 32°F, condensing water can freeze and cause socket contact failures and other problems. Take care under this condition.

DATA

1. Maximum value for switching capacity per relay (output)

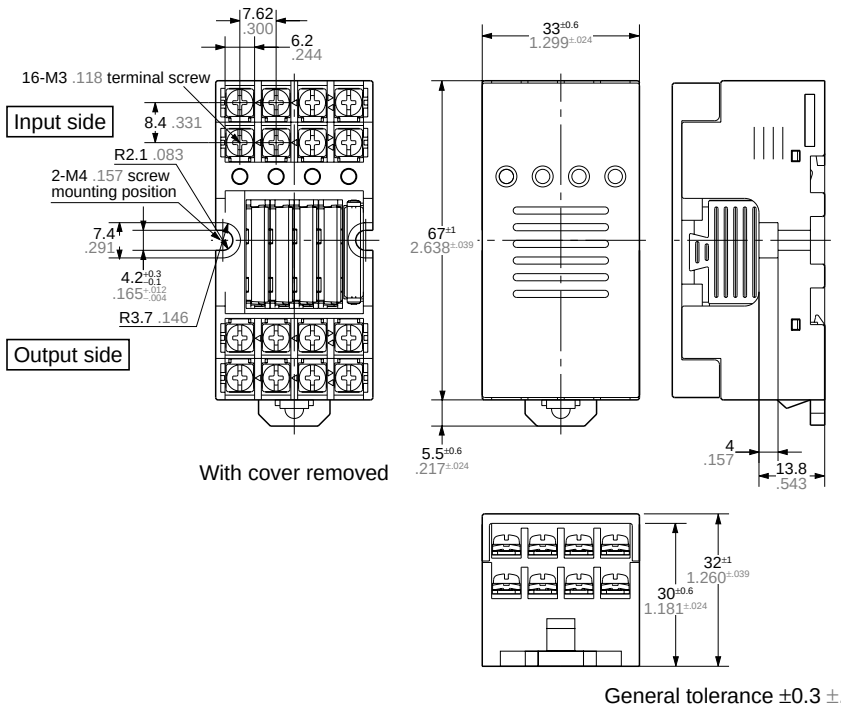


2. Life curve per relay (output)



DIMENSIONS

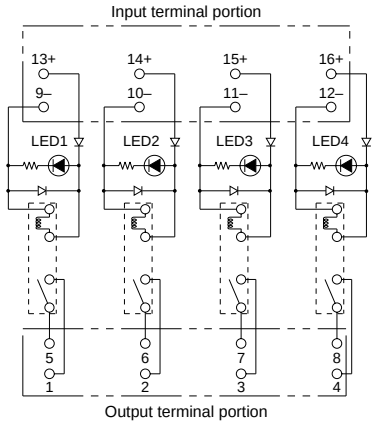
mm inch



With cover removed

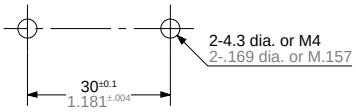
General tolerance ±0.3 ±.012

Internal schematic



Note: Cannot be equipped with Power PhotoMOS standard type relays. However, equipping with voltage sensitive type of Power PhotoMOS relays (AQZ○○○D) is possible.

Panel cutout

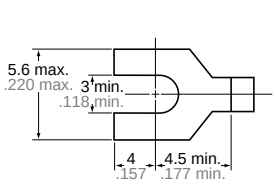


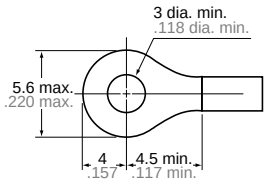
TERMINAL BLOCK

We recommend using wire-pressed terminals for connection to the terminal portion.

- Applicable electrical wire
  0.25 to 1.65 mm² .01 to .065 inch
- Applicable wire-pressed terminals

mm inch





ACCESSORIES

Short circuit plate

Use when you want to bridge terminals.
For the external dimensions, see the Options section for —4-point Unit Relay (Power PhotoMOS Relay Type).—

< With insulator >

AY3802

< Without insulator >

AY3803

CAUTIONS FOR USE

1. Operating environment

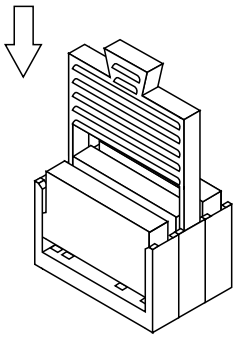
1) Keep the product as far way as possible from power cables, high tension equipment, power equipment, equipment with transmitting devices such as amateur radios, or equipment which generates a large switching surge.
2) The main unit is made of resin; therefore, do not use it in areas where it may come in contact with (or be exposed to) organic solvents such as benzine, thinner, and alcohol, or strong alkaline substances such as ammonia and caustic soda.
3) Do not use the product in areas where it may be exposed to flammable gases, corrosive gases, excessive dust, or moisture, or areas where it may be subjected to strong vibration or shock.

2. Dropping

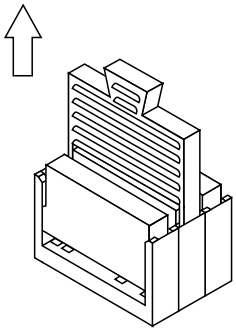
If a unit is dropped be sure to check its external appearance and characteristics before using it.

3. Installing and removing the module

1) Firmly insert the module into the socket with the terminals going in the direction of the blade receptacles.
2) The module can be easily removed using the removal key.
(1) Insert the removal key into the socket slots.



(2) Pull the removal key up to remove the module.

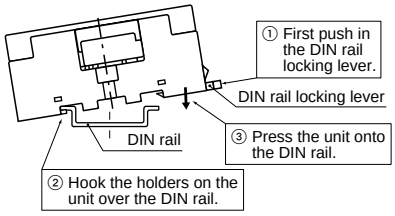


4. Wiring and circuit configuration

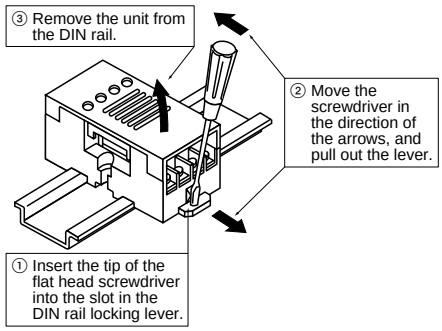
1) Perform wiring according to the internal schematic. Take care not to make any mistakes.
2) We recommend the use of wire-pressed terminals for connection to the terminal portion.
3) When the load is inductive, we recommend adding a diode or surge absorber at both ends of the load.

5. Installation

1) Perform mounting hole cutout according to the panel cutout drawings.
2) When installing the unit on a DIN rail, use the DIN rail locking lever on the side of the unit. Installation is accomplished by simply fitting the unit onto the rail and pressing gently.



3) To remove the unit from the DIN rail, use a flat head screwdriver to pull out the DIN rail locking lever.



6. Transporting and storage

1) If the product is subjected to extreme vibration while being transported, the relays may become detached, the lead may become bent, and the unit may become damaged. Handle the inner and outer boxes with care.
2) If the product is stored in an extremely adverse environment, visible defects and deterioration of performance characteristics may result. We recommend the following storage conditions.

- Temperature: 5 to 30°C 41 to 86°F
- Humidity: Max. 60% R.H.
- Environment: No hazardous substances such as sulfurous acid gases and little dust.

7. When equipped with Power PhotoMOS relay voltage drive type

Since the Power PhotoMOS relay voltage drive type does not require the current-controlling resistance on the input side, it can be used together with PA relays on 4-point unit relays (PA relay types) or RT-2 relay terminals.
When connecting Power PhotoMOS relay voltage drive types, since it will be a close connection, it will be necessary to be careful of load currents. Be sure to refer to the information given regarding load currents and ambient temperature characteristics in the precautions given for use of RT-2 relay terminals.